

### Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

#### LISTING OF CLAIMS:

Claim 1 (currently amended): A method of determining a rate of cell reproduction using a laser biocavity including a semiconductor laser indicating the presence of cancer, comprising:

- a) determining a laser wavelength of a laser biocavity;
- b) determining a wavelength shift of the laser wavelength of the laser biocavity when a cell in a the fluid passes through a the microchannel of the laser biocavity;
- c) categorizing a phase of the cell by comparing using the wavelength shift of the laser wavelength of the laser biocavity to a wavelength shift generated by a G2 phase cell of the same type as the cell in the fluid to determine whether the cell is in a G2 phase;
- d) determining the phase of a plurality of cells by repeating steps b and c; and
- e) determining a percentage of the plurality of cells in a G2 phase as an indication of the rate of cell reproduction. ; and
- ~~f) comparing the percentage of the cells in the G2 phase to a percentage of a noncancerous cell population in the G2 phase to provide an indication of cancer.~~

Claim 2 (currently amended): The method of claim 1 wherein the step of determining the percentage of the plurality of cells comprises counting a total number of the cells which have passed through the microchannel that ~~produce produce a wavelength shift~~

~~corresponding to the laser wavelength of the laser biocavity containing a cell in a phase selected from a list consisting of G0, G1, S, G2, and M, and counting a number of the cells which have passed through the microchannel that produce a wavelength shift corresponding to the laser wavelength of the laser biocavity containing a cell in the G2 phase.~~

Claim 3 (previously presented) The method of claim 1 wherein the step of determining the percentage of the plurality of cells in a G2 phase comprises forming a histogram of a number of the cells as a function of the wavelength shift produced by each of the cells, and comparing a number of cells at a wavelength shift corresponding to the laser wavelength of the laser biocavity containing the cells in the G2 phase with a number of cells at a wavelength shift corresponding to the laser wavelength of the laser biocavity containing the cells in the G1 phase.

Claims 4-9 (cancelled)

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